

## **Ongoing Changes of Glaciers in Northwestern North America**

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An airborne laser ranging system mounted in a small aircraft has been used to measure surface elevation along about 110 glaciers in Alaska and NW Canada. Profiles flown in the mid-1990s; these measurements were compared to 1950s topographic maps along the same profiles. Repeat profiles on some of these glaciers were flown in 2000/2001, and again in the period 2003-2006. These measurements allow thinning or thickening, volume change and terminus position to be determined over the various time intervals. Most of the glaciers are thinning and retreating, although a few show small change or are actually thickening and/or advancing during the earlier period. The rate of thinning and volume change has been increasing from the period 1950s - 1990s to the period 1990s - 2001. Further acceleration is occurring from 2001 to mid-2000s. This talk will focus on the some of the newer results of this ongoing investigation, including changes of those glaciers close to the location of this symposium on Harding Icefield, Kenai Fjords National Park (eg. Exit Glacier). The glaciers in this study include in those that terminate on land, lakes and tidewater, a few of which are actually thickening/advancing. The algebraic sum of these changes shows an overall volume loss that is contributing to sea level rise. These ongoing changes are related to changing temperature and precipitation in the Arctic.